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FACTSHEET

A 2020 perspective on ecological connectivity in the Carpathians

CZECH REPUBLIC


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Carpathian large carnivores - lynx, wolf, bear - are an essential piece of the **European biodiversity** puzzle. They depend on large home territories and long distance movement. Any limit to their mobility, such as landscape fragmentation, poses a serious threat to their survival. Thus they require an **ecological network of suitable habitat and migration corridors**.

Lynx, wolf and bear individuals from **the Czech Republic** need to connect to the large carnivore populations from the broader Carpathian ecoregion. Bringing the **ecological network** into spatial planning ensures a better protection of suitable habitat patches (not only natural protected areas) and their connectivity, for large carnivores and many other wildlife species.

Landscape fragmentation in the Czech Republic

Wildlife becomes increasingly isolated by rapid **landscape fragmentation** and growing numbers of barriers: transport infrastructure (motorways, highways, railways), urban development, intensive agricultural practices or large-scale fencing in the landscape.

What is the impact of landscape fragmentation on wildlife?

Direct and scientific observations show that animals ...

- »die on the roads (traffic mortality)
- »cannot migrate for mating, feeding, hibernation
- »no longer have their vital living space (suitable habitat)
- »are disturbed by noise / light pollution


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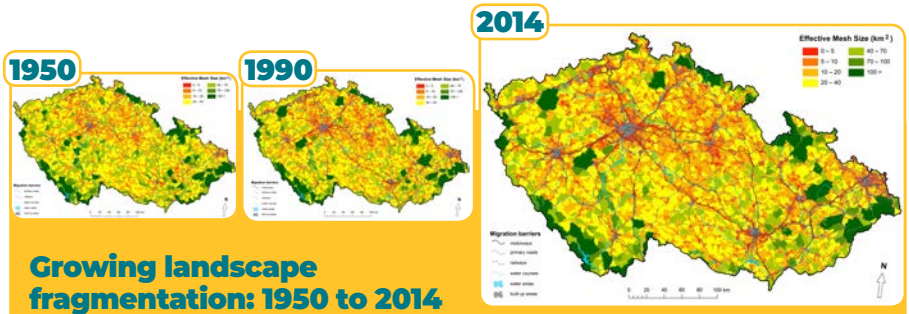

Growing landscape fragmentation: 1950 to 2014

Authors: Vladimír Zýka, Hana Skokanová, Marek Havlíček.

Project: EHP-CZ02-OV-1-028-2015 Complex Approach to the Protection of Fauna of Terrestrial Ecosystems from Landscape Fragmentation in the Czech Republic (2015–2017), co-funded by EEA and Norway Grants.

Focus: Problematic barrier sites in the layer of biotopes of selected specially protected species of large mammals.

Tools and methodology: Effective Mesh Size tool (developed by Jaeger, 2000; Moser *et al.*, 2007) intersecting fragmentation geometry (urban areas and road networks) and a regular squared network (1 km per edge).

Color code: How to read the map? The colors on the map show **how probable it is for two animals** coming from different places in the same region **to meet** without having to cross a barrier. Red indicates low chances to meet, while green means "green light" for meetings.
Red = fragmentation, green = ecological connectivity

Can we meet? Only if we have "green light"

Evolution: In the timeframe captured by the three maps, landscape fragmentation increased as a consequence of the constant urban sprawl and the development of the road network. The barrier effect peaked during the recent years (1990-2014).

"Crumbling" landscapes.
More cities = more roads = more barriers = more fragmentation

Where should we focus our efforts to ensure ecological connectivity?

Legal solutions

- **Natura 2000 Assessment**
- **SEA** (Strategic Environmental Assessment)
- **EIA** (Environmental Impact Assessment)
- „Territorial analytical documents", according to **Act Nr. 183/2006 Col., on town and country planning and building code (Building Act)** For example: biotope of selected specially protected species of large mammals.

Practical solutions

Safe animal crossing under a railway at the border crossing: Mosty u Jablunkova – Bystřice n. Olší

The last two wildlife migration corridors from Slovakia and Poland - allowing free animal movement in east-west direction - have been identified in the Eastern part of the Czech Republic. The same area where the planned railway reconstruction could have become a potential threat to ecological connectivity.

While the reconstruction was in its early stages, a solution was proposed by the Administration of the Beskydy Protected Landscape Area: building two underpasses along the migration corridors, to serve as mitigation structures.

The underpasses are being used by various animal species, according to data collected from the field.

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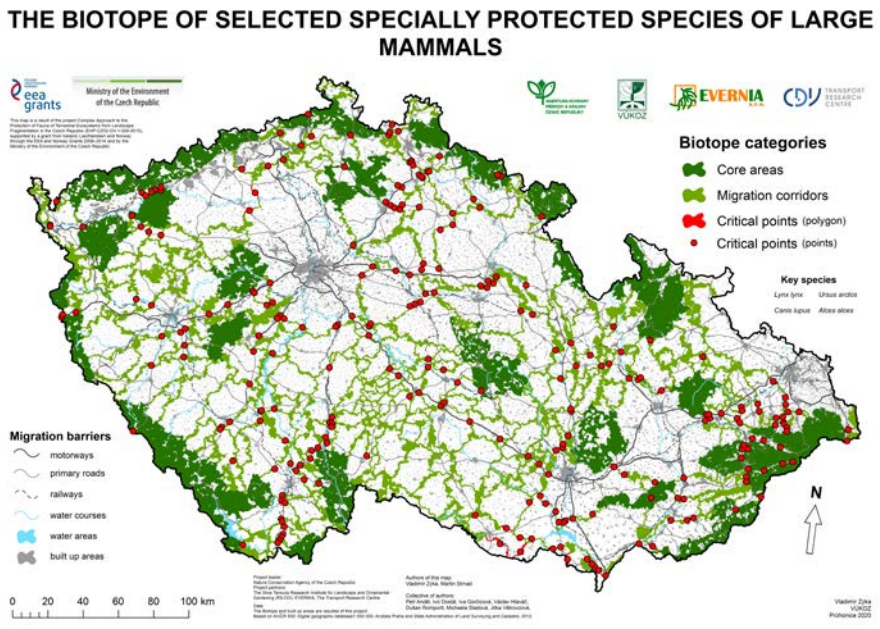
Spatial planning

Spatial planning can support nature conservation and secure critical points where landscape fragmentation threatens ecological connectivity. The map below has become a mandatory basis for spatial planning in the Czech Republic since February 2020.

A biotope is any suitable type of environment that can be used by a species for long-term presence and migration.



Critical corridors for wildlife in the Czech Republic

Authors: Vladimír Zýka, Martin Strnad, Petr Anděl, Ivo Dostál, Iva Gorčicová, Václav Hlaváč, Dušan Romportl, Michaela Sladová, Jitka Větrovcová.

Project: EHP-CZ02-OV-1-028-2015 Complex Approach to the Protection of Fauna of Terrestrial Ecosystems from Landscape Fragmentation in the Czech Republic (2015–2017), co-funded by EEA and Norway Grants.

Methodology: Occurrence data, habitat and connectivity modelling, verification in the field.

Color code: How to read the map?

- **Dark green**
  Core areas that large mammals use to live and reproduce.
- **Light green**
  Migration corridors which ensure the connectivity between core areas.
- **Red**
  Critical points where **significant migration barriers** (like roads, built up areas, rivers, etc.) cut through migration corridors and limit their function of ensuring connectivity.

ConnectGREEN aims to contribute to maintaining and improving ecological connectivity between natural habitats, especially between Natura 2000 sites and other protected areas of transnational relevance in the Carpathian ecoregion, namely in Czech Republic, Hungary, Romania, Slovakia and Serbia. Partners from various fields of activity joined forces to increase the capacity for the identification and management of ecological corridors and to minimize conflicts between infrastructure development and wildlife conservation. ConnectGREEN will foster cooperation among nature conservationists, natural asset managers, spatial planners and decision makers at the local, national and regional level.

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